Important Forex Management Formulas PDF

Formulas
Examples
with Units

List of 14
Important Forex Management Formulas

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1) Black-Scholes-Merton Option Pricing Model for Call Option Formula ⬈

Formula

$$C = P_c \cdot P_{normal} \cdot \left(D_1 \right) - \left(K \cdot \exp\left(- R_f \cdot t_s \right) \right) \cdot P_{normal} \cdot \left(D_2 \right)$$

Example

$$7568.2558 = 440 \cdot 0.05 \cdot \left(350 \right) - \left(90 \cdot \exp\left(- 0.30 \cdot 2.25 \right) \right) \cdot 0.05 \cdot \left(57.5 \right)$$

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2) Black-Scholes-Merton Option Pricing Model for Put Option Formula ⬈

Formula

$$P = K \cdot \exp\left(- R_f \cdot t_s \right) \cdot \left(- D_2 \right) - P_c \cdot \left(- D_1 \right)$$

Example

$$151365.1155 = 90 \cdot \exp\left(- 0.30 \cdot 2.25 \right) \cdot \left(- 57.5 \right) - 440 \cdot \left(- 350 \right)$$

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3) Cumulative Distribution One Formula ⬈

Formula

$$D_1 = \frac{\ln\left(\frac{P_c}{K} \right) + \left(R_f + \frac{v_{us}^2}{2} \right) \cdot t_s}{v_{us} \cdot \sqrt{t_s}}$$

Example

$$146.2577 = \frac{\ln\left(\frac{440}{90} \right) + \left(0.30 + \frac{195^2}{2} \right) \cdot 2.25}{195 \cdot \sqrt{2.25}}$$

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4) Cumulative Distribution Two Formula ⬈

Formula

$$D_2 = D_1 - v_{us} \cdot \sqrt{t_s}$$

Example

$$57.5 = 350 - 195 \cdot \sqrt{2.25}$$

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5) Fama-French Three-Factor Model Formula ⬈

Formula

$$Rexc = \alpha i + \beta_F \cdot \left(R_{mkt} - R_f \right) + \left(si \cdot SMB + h_{ml} + E_i \right)$$

Example

$$23.134 = 8 + 0.07 \cdot \left(6.5 - 0.30 \right) + \left(2.5 \cdot 3.5 + 4.5 + 1.45 \right)$$

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6) Forward Rate Formula

Formula

$$F_o = Sp \cdot \ln\big(\big(r_d - r_f\big) \cdot T\big)$$

Example

$$40.8641 = 21 \cdot \ln\big(\big(0.90 - 0.20\big) \cdot 10\big)$$

Evaluate Formula

7) Gordon Growth Model Formula

Formula

$$P_c = \frac{D}{RR - g}$$

Example

$$440 = \frac{22}{0.08 - 0.03}$$

Evaluate Formula

8) Interest Rate Parity Formula

Formula

$$k_f = Sp \cdot \left(\frac{1 + I_Q}{1 + I_B}\right)$$

Example

$$27.2519 = 21 \cdot \left(\frac{1 + 16}{1 + 12.1}\right)$$

Evaluate Formula

9) Intrinsic Value Formula

Formula

$$ITV = SP - BSV$$

Example

$$1.6 = 1.85 - 0.25$$

Evaluate Formula

10) Payoff for Call Buyer Formula

Formula

$$PCB = \max\big(0, S_T - X\big)$$

Example

$$3 = \max\big(0, 29 - 26\big)$$

Evaluate Formula

11) Position Size in Forex Formula

Formula

$$Pf = \frac{A_E \cdot R_{f\%}}{S_{LP} \cdot P_{VF}}$$

Example

$$1200 = \frac{45 \cdot 4}{15 \cdot 0.01}$$

Evaluate Formula

12) Profit for Call Buyer Formula

Formula

$$Pft = \max\big(0, S_T - X\big) - c_0$$

Example

$$1.5 = \max\big(0, 29 - 26\big) - 1.5$$

Evaluate Formula

13) Purchasing Power Parity Theory using Inflation Formula

Formula

$$E_f = \left(\frac{1 + Ih}{1 + If}\right) - 1$$

Example

$$0.0373 = \left(\frac{1 + 0.39}{1 + 0.34}\right) - 1$$

Evaluate Formula

Formula

$$dr_t = a \cdot \left(b - r_t \right) \cdot d \cdot t + \sigma \cdot d \cdot W_t$$

Example

$$3675 = 12 \cdot \left(6 - 5 \right) \cdot 50 \cdot 2 + 9 \cdot 50 \cdot 5.5$$

Evaluate Formula ⤤

Variables used in list of Forex Management Formulas above

- **a** Speed of Mean Reversal
- A_E Account Equity
- **b** Long Term Mean
- **BSV** Base Value
- **C** Theoretical Price of Call Option
- c_0 Call Premium
- **d** Derivatives
- **D** Dividend Per Share
- D_1 Cumulative Distribution 1
- D_2 Cumulative Distribution 2
- dr_t Derivative of Short Rate
- E_f Exchange Rate Factor
- E_i Error Term
- F_o Forward Rate
- **g** Constant Growth Rate of Dividend
- h_{ml} Sensitivity of the Asset to HML
- I_B Interest Rate of Base Currency
- I_Q Interest Rate of Quote Currency
- **ITV** Intrinsic Value
- **K** Option Strike Price
- k_f Forward Rate Constant
- **P** Theoretical Price of Put Option
- P_c Current Stock Price
- P_{normal} Normal Distribution
- **PCB** Payoff for Call Buyer
- **Pf** Position Size in Forex
- **Pft** Profit for Call Buyer
- r_d Domestic Interest Rate
- $R_{f\%}$ Risk Percentage in Forex
- r_f Foreign Interest Rate
- R_f Risk Free Rate
- R_{mkt} Return on Market Portfolio

Constants, Functions, Measurements used in list of Forex Management Formulas above

- Functions: **exp**, exp(Number)
  n an exponential function, the value of the function changes by a constant factor for every unit change in the independent variable.
- Functions: **ln**, ln(Number)
  The natural logarithm, also known as the logarithm to the base e, is the inverse function of the natural exponential function.
- Functions: **max**, max(a1, …, an)
  Maximum of a function is the highest value that the function can output for any possible input.
- Functions: **sqrt**, sqrt(Number)
  A square root function is a function that takes a non-negative number as an input and returns the square root of the given input number.

- **r$_t$** Short Rate
- **Rexc** Excess Return on Asset
- **RR** Required Rate of Return
- **S$_{LP}$** Stop Loss in Pips
- **S$_T$** Price of Underlying at Expiration
- **si** Sensitivity of the Asset to SMB
- **SMB** Small Minus Big
- **Sp** Spot Exchange Rate
- **SP** Share Price
- **t** Time Period
- **T** Time to Maturity
- **t$_s$** Time to Expiration of Stock
- **v$_{us}$** Volatile Underlying Stock
- **W$_t$** Random Market Risk
- **X** Exercise Price
- **αi** Asset Specific Alpha
- **β$_F$** Beta in Forex
- **If** Inflation in Foreign Country
- **Ih** Inflation in Home Country
- **P$_{VF}$** Pip Value in Forex
- **σ** Volatility at Time

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